Roll No. | | | | | | |

Sig. of Candidate.________________

Answer Sheet No.________________

Sig. of Invigilator.________________

CHEMISTRY SSC–I

SECTION – A (Marks 12)

Time allowed: **20 Minutes**

NOTE:- **Section–A is compulsory. All parts of this section are to be answered on the question paper itself. It should be completed in the first 20 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.**

Q. 1 Circle the correct option i.e. A / B / C / D. Each part carries one mark.

(i) Who discovered sulphuric acid?
A. Al Jahiz B. Berzelius C. Jabar Bin Haiyan D. Aristotle

(ii) Mass is neither created nor destroyed, during a chemical reaction but it only changes from one form to another form. What is this law called?
A. Law of definite proportions B. Law of multiple proportions
C. Law of reciprocal proportions D. Law of conservation of mass

(iii) The atom of which of the following elements is the lightest?
A. Hydrogen B. Carbon C. Oxygen D. Nitrogen

(iv) What are β – rays?
A. Protons B. Neutrons C. Electrons D. Positrons

(v) In how many groups has the Modern Periodic Table been divided?
A. 8 B. 18 C. 7 D. 20

(vi) Which of the following will have eight electrons in its outermost shell?
A. Fe B. K C. H^{+1} D. Cl^{-1}

(vii) Which of the following compounds changes directly into vapours upon heating?
A. Na_2CO_3 B. $CaCO_3$ C. NH_4Cl D. $AlCl_3$

(viii) One dm^3 solution has been prepared by dissolving 49 g of sulphuric acid in water. What will be the molarity of this solution?
A. $0.5M$ B. $0.25M$ C. $0.75M$ D. $0.125M$

(ix) What is the process of deposition of a metal on another metal called?
A. Electrolysis B. Electroplating C. Radioactivity D. Ionization

(x) How many Ionisable Hydrogen atoms are there in acetic acid?
A. Four B. Two C. One D. Three

(xi) What will be the property of the solution obtained by mixing $50cm^3$ of $0.1M$ Hydrochloric acid solution in $50cm^3$ of $0.1M$ Sodium hydroxide solution?
A. Acidic B. Basic C. Neutral D. None of these

(xii) Which of the following is used to cure the sting of wasp?
A. Vinegar B. Lye
C. Magnesia D. Litmus powder

For Examiner's use only:

Total Marks: 12

Marks Obtained:

CHEMISTRY SSC–I

Time allowed: 2:40 Hours **Total Marks Sections B and C: 53**

NOTE:- Answer any eleven parts from Section 'B' and any two questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet–B if required. Write your answers neatly and legibly.

SECTION – B (Marks 33)

Q. 2 Answer any ELEVEN parts. The answer to each part should not exceed 3 to 4 lines. (11 x 3 = 33)

(i) Who were Alchemists and what was their idea? 1½+1½

(ii) Carbon and oxygen combine to form two types of oxides "A" and "B". "A" contain $12g$ of carbon with $16g$ of oxygen, whereas "B" contains $12g$ of carbon with $32g$ of oxygen.

- a. State the law, governing the formation of two different oxides from the same elements. ½
- b. How does the data prove the law? 1½
- c. Write the formula for oxides "A" and "B". ½+½

(iii) Complete and balance the following equations:

- a. $H_2S_{(g)} + SO_{2(g)} \longrightarrow$ 01
- b. $Na_2CO_{3(s)} + HCl_{(aq)} \longrightarrow$ 01
- c. $Al_{(s)} + O_{2(g)} \longrightarrow$ 01

(iv) Differentiate between Natural Radioactivity and Artificial Radioactivity. 03

(v) Who discovered neutron? Give two properties of neutrons. 1+2

(vi) What is meant by Law of Octaves? 03

(vii) Metallic bond is present in metals. Explain why.

- a. Metals are good conductor of electricity. 01
- b. High pressure changes the shape of metals. 01
- c. The melting and boiling points of metals are usually very high. 01

(viii) Give the electronic configuration of the following elements: ${}_{11}Na^{23}$, ${}_{17}Cl^{35.5}$ 03

(ix) Define hydrogen bonding. 03

(x) Define the following:

- a. Saturated solution 1½
- b. Super saturated solution 1½

(xi) Define electrochemistry. 03

(xii) Differentiate between Electrolytic cell and Voltaic cell. 03

(xiii) What is the sum of pH and pOH in solution? If a solution has pH 5.5, what will be its pOH? 03

(xiv) What do you know about spectator ion? 03

(xv) Differentiate between heat of reaction and enthalpy of reaction. 03

SECTION – C (Marks 20)

Note: Attempt any TWO questions. All questions carry equal marks. (2 x 10 = 20)

Q. 3 Define Modern Periodic Law. Give any SIX features of the Modern Periodic Table. Write down trends in the electron affinity and ionization energy of elements in groups and periods. 2+6+2

Q. 4 Define chemical reaction. Explain types of chemical reactions with one example of each.

Write down balance chemical equation in support of each type. 2+4+4

Q. 5 What is Solubility? Describe the various factors which affect solubility? 2+8